

WHAT IS CLAIMED IS:

1. A system for extracting usable hydrocarbon fuel pre-products from waste material, comprising:

a process chamber for receiving said waste material, said waste material having been heated until said fuel pre-products are in a liquid form;

a heater for heating said process chamber to a substantially constant temperature, whereby said fuel pre-products are converted to gaseous hydrocarbon fuel products; and

a vacuum whereby said gaseous hydrocarbon fuel products are extracted from said liquid fuel pre-products by reducing a vapor pressure of said fuel products, thereby promoting off-gassing from said liquid fuel pre-products.

2. The system of Claim 1, further comprising an agitator for agitating said liquid fuel pre-products, whereby said off-gassing is further promoted.

3. The system of Claim 1, further comprising a melting chamber for heating said fuel pre-products to produce said liquid fuel pre-products prior to introduction to said process chamber.

4. The system of Claim 3, wherein said melting chamber is heated to a temperature substantially equal to 585 degrees Fahrenheit.

5. The system of Claim 1, wherein said process chamber is heated to a temperature substantially equal to 850 degrees fahrenheit.

6. The system of Claim 1, wherein said process chamber has a continuous feed, wherein said waste material is received at a first end, said gaseous hydrocarbon fuel components are removed through said vacuum system and a remainder of said waste material is ejected at a second end.

7. The system of Claim 6, wherein said process chamber comprises:

an auger for feeding said waste material through said process chamber; and

an auger housing for enclosing said auger, wherein a drive system is coupled to said auger for rotating said auger to feed said waste material through said process chamber.

8. The system of Claim 7, wherein said auger further comprises agitator buckets attached to a blade of said auger for agitating said liquid fuel pre-products, whereby said off-gassing is

further promoted.

9. The system of Claim 7, wherein a portion of said auger is included in a melting chamber for heating said fuel pre-products to produce said liquid fuel pre-products prior to introduction to said process chamber, said melting chamber auger portion being heated to a lower temperature than a temperature of the process chamber auger portion.

10. The system of Claim 9, further comprising a feed system for feeding said waste material into said melting chamber, said feed system comprising:

a feed hopper coupled to said process chamber, whereby said waste material is introduced to said system; and

a feed drive for compressing said waste material and introducing said compressed waste material to said process chamber.

11. The system of Claim 10, wherein said feed drive is a feed auger.

12. The system of Claim 1, wherein said heater comprises a pressure chamber disposed around said process chamber, whereby hot air is circulated to heat said process chamber.

13. The system of Claim 9, wherein said pressure chamber comprises a:

first cylinder enclosing said process chamber, said first cylinder having perforations through a wall of said cylinder for diffusing heat from an inner wall to an outer wall of said first cylinder for providing a uniform temperature at said process chamber; and

a second cylinder enclosing said first cylinder, said second cylinder including a plurality of pipes disposed radially between an outer wall of said second cylinder and an inner wall of said first cylinder, whereby heated air may pass from said outer wall of said second cylinder to said process chamber.

14. The system of Claim 1, wherein said heater is a closed-system air heater, wherein said air is recirculated around said process chamber.

15. The system of Claim 14, comprising multiple process chambers coupled to said heater.

16. The system of Claim 15, wherein a remainder of said waste material from each of said multiple process chambers is fed through an additional process chamber coupled to said heater for removing any remaining hydrocarbon fuel products from said remainder.

17. A system for extracting usable hydrocarbon fuel pre-products from waste material, comprising:

means for liquifying said hydrocarbon fuel pre-products;

means for heating said hydrocarbon fuel pre-products to form  
5 gaseous hydrocarbon fuel products; and

means for continuously removing said gaseous hydrocarbon fuel products so that said hydrocarbon fuel pre-products will continue to off-gas.

10 18. The system of Claim 17, further comprising means for agitating said liquid hydrocarbon fuel products to promote said off-gassing.

15 19. The system of Claim 17, further comprising means for removing a remainder of said waste material from said liquid hydrocarbon fuel products.

20 20. The system of Claim 19, wherein said means for removing said remainder further comprises means for agitating said liquid hydrocarbon fuel products to promote said off-gassing.

21. A method for extracting usable hydrocarbon fuel pre-products from waste material, comprising:

liquifying said usable hydrocarbon fuel pre-products to form a liquid;

5 heating said liquid until said liquid off-gasses gaseous hydrocarbon fuel products; and

removing said gaseous hydrocarbon fuel products by a vacuum system.

10 22. The method of Claim 21, further comprising agitating said liquid to promote said off-gassing.

23. The method of Claim 22, further comprising the step of rotating an auger within said process chamber, and wherein said agitating is performed by said rotating, and wherein said auger further moves a remainder of said waste material out of said liquid.

24. The method of Claim 21, wherein said waste material is a mixture of oil waste with soil, and wherein said liquifying liquifies only said oil waste.

25. The method of Claim 21, wherein said waste material is a plastic material and wherein said liquifying liquifies said plastic material.